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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,603

04/01/2004

Rakesh Roshan

YAMAP0924US

9680

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11/03/2006

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EXAMINER

NGUYEN, TUAN N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/815,603	ROSHAN ET AL.	
	Examiner	Art Unit	
	Tuan N. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-22, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>09/09/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. In respond to applicant's response to restriction requirement filed 09/05/2006, Applicant elects Species C (Fig. 6a-6b) without traverse. Applicant request examination of claims 16-20, 22-26.

The examiner assumes claims 16-26 are to be examined for claim 21 is depended on claim 19, which depend on claim 16.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

3. Claims 16-22, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art (Fig 1) in view of Matsui Yasushi (JP 09283850)

With respect to claims 16, 17, 18 Prior Art (Fig 1) shows and discloses a *semiconductor* device comprising an active region; a cladding region; and a saturable absorbing layer disposed

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within the cladding region (*Fig 1: 4,5,6,7 semiconductor, active and absorbing layer within claddings*); the claim further require wherein the saturable absorbing layer comprises one portion or plurality portions that is absorbing for light emitted by the active region and comprises another portion(s) that is not absorbing for light emitted by the active region. Prior Art (Fig 1) does not explicitly disclose absorbing layer comprises one portion absorbing and one portion that is not absorbing light from the active layer. Matsui Yasushi (JP 09283850) teaches the use of periodically absorber layer in a semiconductor device, *that capable of absorbing one portion of light from the active layer and one portion does not absorb light from the active layer (Abstract; Fig 5b: 2, 19)*. It would have been obvious to one of ordinary skill in the art to provide Prior Art with the periodic absorber layer as taught or suggested by Matsui Yasushi (JP 09283850), for the benefit of having a low current and high emission efficient device.

With respect to claim 19, (Fig 5b: 19, 2) shows where the absorbing and non-absorbing portions of the saturable absorbing layer are each *substantially stripe-shaped*.

With respect to claim 20, Prior Art (Fig 1) shows the device is a semiconductor laser device.

With respect to claim 21, Matsui Yasushi (JP 09283850) (*Fig 5b: 2, 19*) shows the device is a semiconductor laser device and wherein the absorbing and non-absorbing portions of the saturable absorbing layer **are crossed** (*perpendicularly*) with the lasing direction of the laser device.

With respect to claim 22, Matsui Yasushi (JP 09283850) (*Fig 5b: 2, 19*) shows the device is a stripe ridge laser device, where the saturable absorbing layer comprises a first stripe-shaped non-absorbing portion disposed substantially under and substantially parallel to the stripe ridge (*Fig 5a/b: 15, 16, 2 non-absorbing disposed under the strip ridge*).

With respect to claims 25, 26 it is inherently obvious at least one absorbing portion of the saturable absorbing layer is coupled to an optical mode propagating in the laser device, *since the saturable absorber is optically couple to active region*; and it is inherently obvious laser device is a *self-pulsation* device, since the laser wavelength is pulsed.

#### ***Allowable Subject Matter***

4. Claims 23, 24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest:

#### **Claim 23:**

wherein the saturable absorbing layer comprises at least a second non-absorbing portion, said second non-absorbing portion of the saturable absorbing layer not being disposed under the stripe ridge.

#### ***Communication Information***

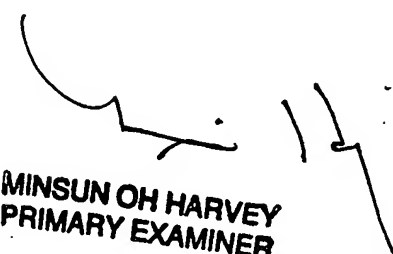
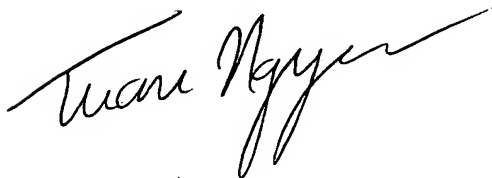
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen



**MINSUN OH HARVEY  
PRIMARY EXAMINER**